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=> file reg
FILE 'REGISTRY' ENTERED AT 12:32:05 ON 24 APR 2002
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     FILE 'HCAPLUS' ENTERED AT 11:50:37 ON 24 APR 2002
L1             1 S STURLEY D?/AU
L2            57 S STURLEY ?/AU
L3        199038 S LUMIN?
L4             0 S L2 AND L3

     FILE 'REGISTRY' ENTERED AT 11:52:08 ON 24 APR 2002
L5           958 S (MG OR CA OR SR OR ZN)/ELS (L) AL/ELS (L) B/ELS (L) O/E
L6           112 S L5 (L) EU/ELS
L7            54 S L6 (L) (PT OR ND OR DY OR TM)/ELS
L8            10 S L7 (L) 6/ELC.SUB
L9            44 S L7 NOT L8

     FILE 'HCA' ENTERED AT 12:07:05 ON 24 APR 2002
L10            7 S L8
L11            9 S L9
L12       243311 S LUMIN? OR LUMEN? OR PHOTOLUM!N? OR ELECTROLUM!N? OR CHE
L13            4 S L10 AND L12
L14            3 S L11 AND L12
L15            5 S L13 OR L14
L16            3 S L10 NOT L15

     FILE 'REGISTRY' ENTERED AT 12:10:12 ON 24 APR 2002
L17          290 S A2/PG (L) AL/ELS (L) O/ELS (L) B/ELS (L) LNTH/PG
L18          101 S L17 NOT 6<ELC.SUB
L19           10 S L17 AND 5/ELC.SUB
L20           85 S L17 AND 6/ELC.SUB

     FILE 'HCA' ENTERED AT 12:17:54 ON 24 APR 2002
L21           11 S L19
L22           26 S L20
L23            4 S L21 AND L12
L24           12 S L22 AND L12
L25           11 S L24 NOT L23
L26            7 S L21 NOT (L23 OR L25)

     FILE 'REGISTRY' ENTERED AT 12:20:04 ON 24 APR 2002
L27         2808 S AL2O3
L28          120 S B2O3
L29           13 S L27 AND L28
L30            3 S L29 AND A2/PG
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L31 1 S L29 AND LNTH/PG
L32 0 S L30 AND L31

FILE 'HCA' ENTERED AT 12:23:12 ON 24 APR 2002
L33 3 S L30
L34 1 S L31
L35 4 S (L33 OR L34) NOT (L15 OR L16)

FILE 'REGISTRY' ENTERED AT 12:32:05 ON 24 APR 2002

=> file hca
FILE 'HCA' ENTERED AT 12:32:23 ON 24 APR 2002

=> d l15 1-5 ibib abs hitstr hitind

L15 ANSWER 1 OF 5 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 134:346307 HCA
TITLE: Heat resistant, water resistant bright long afterglow yellow green **luminescent** phosphor and its production
INVENTOR(S): Sumida, Yukio; Mo, Ping Fan
PATENT ASSIGNEE(S): Lead Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001131544	A2	20010515	JP 1999-316624	19991108

AB The invention refers to a yellow green **luminescent** phosphor (Sr2-n-m-k-qE'nEumLnkYq)rAl2O4: Bx,Fy [0 .ltoreq. n .ltoreq. 0.1; 0 .ltoreq. m .ltoreq. 0.05; 0 .ltoreq. k .ltoreq. 0.1; 0 .ltoreq. q .ltoreq. 0.5; 0 .ltoreq. r .ltoreq. 1.5; 0 .ltoreq. x .ltoreq. 0.1 ; 0 .ltoreq. y .ltoreq. 0.1; E' = Mn, Bi, Ca, Mg, or Ba; Ln = Ce, Pr, Gd, Tb, Dy, Ho, Er, Tm, Yb, or Lu].
IT **337509-29-2 337509-31-6 337509-36-1 337509-37-2 337509-38-3**
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)
RN 337509-29-2 HCA
CN Aluminum dysprosium europium strontium borate fluoride oxide (Al2Dy0.01Eu0.01Sr0.98(BO3)0.05F0.08O3.85) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	3.85	17778-80-2
F	0.08	14762-94-8
BO3	0.05	14213-97-9
Eu	0.01	7440-53-1
Sr	0.98	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

RN 337509-31-6 HCA
CN Aluminum dysprosium europium strontium borate fluoride oxide (Al2Dy0.01Eu0.01Sr0.98(BO3)0.05F0.06O3.85) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.85	17778-80-2
F	0.06	14762-94-8
BO3	0.05	14213-97-9
Eu	0.01	7440-53-1
Sr	0.98	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

RN 337509-36-1 HCA
CN Aluminum calcium dysprosium europium strontium borate fluoride oxide (Al2Ca0.05Dy0.01Eu0.01Sr0.93(BO3)0.08F0.07O3.76) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.76	17778-80-2
F	0.07	14762-94-8
BO3	0.08	14213-97-9
Ca	0.05	7440-70-2
Eu	0.01	7440-53-1
Sr	0.93	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

RN 337509-37-2 HCA
CN Aluminum dysprosium europium strontium zinc borate fluoride oxide (Al2Dy0.01Eu0.01Sr0.97Zn0.01(BO3)0.1F0.07O3.7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.7	17778-80-2
F	0.07	14762-94-8
BO3	0.1	14213-97-9

Zn	0.01	7440-66-6
Eu	0.01	7440-53-1
Sr	0.97	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

RN 337509-38-3 HCA
CN Aluminum dysprosium europium strontium borate fluoride oxide (Al2Dy0.02Eu0.01Sr0.97(BO3)0.06F0.07O3.82) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.82	17778-80-2
F	0.07	14762-94-8
BO3	0.06	14213-97-9
Eu	0.01	7440-53-1
Sr	0.97	7440-24-6
Dy	0.02	7429-91-6
Al	2	7429-90-5

IC ICM C09K011-64
ICS C09K011-08; C09K011-80
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST phosphor yellow green **luminescence**
IT Phosphors
Thermal resistance
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)
IT 337509-28-1 **337509-29-2** 337509-30-5 **337509-31-6**
337509-32-7 337509-33-8 337509-34-9 337509-35-0
337509-36-1 337509-37-2 337509-38-3
337509-39-4 337509-40-7
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)
IT 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-30-4, Thulium, uses 7440-53-1, Europium, uses 7440-65-5, Yttrium, uses 7440-69-9, Bismuth, uses
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)

L15 ANSWER 2 OF 5 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 134:48957 HCA
TITLE: Bolts with **luminescent** markings and **luminescent** marking material
INVENTOR(S): Nakajima, Hiroshi
PATENT ASSIGNEE(S): Nakajima Kogyo Y. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000346024	A2	20001212	JP 1999-154046	19990601

AB Bolts are described which are provided with a persistent phosphor marking in conjunction with a light-collecting structure in the bolt head. By providing the bolt head with sections with a persistent phosphor marking and with a fluorescent material marking, visibility under both well lit and darkened conditions may be assured. Preferably, the phosphor is a calcined phosphor are described by the general formula (M1-p-qEupQq)O.n(Al1-mBm)2O3 (0.0001 .ltoreq. p .ltoreq. 0.5; 0.0001 .ltoreq. Q .ltoreq. 0.5; 1.5 .ltoreq. N .ltoreq. 3.0; 0 .ltoreq. m .ltoreq. 0.5; M = Mg, Ca, Sr, Ba, and/or Zn; Q = Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and/or Lu).

IT **313216-32-9P**
(bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

RN 313216-32-9 HCA

CN Aluminum dysprosium europium strontium borate oxide (Al3.51Dy0.02Eu0.01Sr0.97(BO3)0.05O6.19) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.19	17778-80-2
BO3	0.05	14213-97-9
Eu	0.01	7440-53-1
Sr	0.97	7440-24-6
Dy	0.02	7429-91-6
Al	3.51	7429-90-5

IC ICM F16B033-06
ICS C04B041-86; F16B035-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST bolt **luminescent** marking persistent phosphor

IT Bolts
Fluorescent substances
(bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

IT Phosphors
(persistent; bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

IT **313216-32-9P**
(bolts with **luminescent** markings including persistent phosphors and persistent **lumin scent** marking material)

IT 7429-91-6, Dysprosium, uses 7439-94-3, Lutetium, uses 7439-96-5, Manganese, uses 7440-00-8, Neodymium, uses 7440-03-1, Niobium, uses 7440-10-0, Praseodymium, uses 7440-27-9, Terbium, uses

7440-30-4, Thulium, uses 7440-52-0, Erbium, uses 7440-54-2, Gadolinium, uses 7440-60-0, Holmium, uses 7440-64-4, Ytterbium, uses 7440-67-7, Zirconium, uses
(phosphors activated with europium and; bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

IT 7440-53-1, Europium, uses
(phosphors activated with; bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

L15 ANSWER 3 OF 5 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 133:105774 HCA
TITLE: Phosphorescent substance-containing polymer beads with excellent water resistance and their manufacture
INVENTOR(S): Ikoma, Masato; Sashimono, Kazuhiko; Sumida, Yukio; Mo, Ping Fan
PATENT ASSIGNEE(S): Negami Kogyo K. K., Japan; Lead Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000198938	A2	20000718	JP 1998-377362	19981228

AB The polymer beads consist of spherical polymer particles contg. .gtoreq.1 highly rigid amorphous phosphorescent particles (prepd. by crushing sintered materials and classifying). Thus, a 60:10 parts Me methacrylate-ethylene glycol dimethacrylate was suspension polymd. in the presence of 30 parts Sr0.982Eu0.005Dy0.008Y0.005Al1.98Si0.0154 to give beads showing high **luminance** and long lifetime.

IT **281682-13-1**
(phosphorescent substance; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)

RN 281682-13-1 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al11.2Dy0.02Eu0.02Sr3.6(BO3)2.8O16.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	16.6	17778-80-2
BO3	2.8	14213-97-9
Eu	0.02	7440-53-1
Sr	3.6	7440-24-6
Dy	0.02	7429-91-6

Al | 11.2 | 7429-90-5

IC ICM C08L101-00
ICS C08F002-18; C08F002-44; C08K003-34; C09C003-10; C09K011-64; C09K011-66
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 73
ST phosphorescent dispersibility polymer bead high **luminance**; acrylic polymer suspension polymn strontium aluminate; aluminum dysprosium europium strontium oxide **luminescence**
IT Silicone rubber, properties
(TSE 3032, crosslinked, beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Polyesters, properties
(beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Dispersing agents
Phosphorescent substances
(manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Epoxy resins, properties
(polyamine-crosslinked; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Polyurethanes, properties
(polyester-, beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Polymerization
(suspension; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 9003-70-7P, Divinylbenzene-styrene copolymer 25777-71-3P, Ethylene glycol dimethacrylate-methyl methacrylate copolymer
(beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 198974-92-4, Vylon 200, polymer with Coronate HX 281658-99-9 281659-00-5
(beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 9002-89-5, Poval 220 9003-39-8, PVP K 90 9004-65-3, Marpolose 90MP4000
(dispersing agent; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 259197-69-8 281682-09-5 281682-10-8, Aluminum strontium borate oxide (Al1.9Sr0.99(BO3)0.1O3.7) 281682-11-9 281682-12-0 **281682-13-1**
(phosphorescent substance; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)

L15 ANSWER 4 OF 5 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 128:328886 HCA
TITLE: **Electroluminesc nt** device and

light-emitting diode containing divalent europium-activated phosphor and display device using them
INVENTOR(S): Kumeta, Shinji
PATENT ASSIGNEE(S): Nichia Chemical Industries Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10112557	A2	19980428	JP 1996-266450	19961008

AB The **electroluminescent** (EL) device comprises a GaN-based LED chip with main emission peak 360-530 nm and a divalent Eu-activated phosphor (M1-p-qEupQq)O.n(Al1-mBm)2O3 [I; p = 0.0001-0.5; q = 0.0001-0.5; n = 0.5-10; m = 0-0.5; p + q = 0.0002-0.75; M = Mg, Ca, Sr, Ba, and/or Zn; Q (coactivator) = Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and/or Lu]. The LED comprises a GaN-based LED chip coated with a I-contg. translucent polymer. The display device comprises a display unit contg. .gtoreq.2 EL devices and an elec. connected driving circuit. The EL device shows high emission, long service time, and low driving voltage.

IT **178561-91-6 207237-48-7**
(LED display using Eu-activated phosphor and GaN-based LED chip)

RN 178561-91-6 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.98Dy0.02Eu0.03Sr0.95(BO3)0.02O3.93) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.93	17778-80-2
BO3	0.02	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.98	7429-90-5

RN 207237-48-7 HCA
CN Aluminum dysprosium europium strontium zirconium borate oxide (Al3.32Dy0.02Eu0.03Sr0.26Zr0.7(BO3)0.18O5.72) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	5.72	17778-80-2
BO3	0.18	14213-97-9
Zr	0.7	7440-67-7

Eu	0.03	7440-53-1
Sr	0.26	7440-24-6
Dy	0.02	7429-91-6
Al	3.32	7429-90-5

IC ICM H01L033-00
ICS H01L033-00; C09K011-64; G09F009-33
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST **electroluminescent** device display europium activated phosphor; gallium nitride LED **electroluminescent** display
IT **Electroluminescent** devices
Phosphors
(LED display using Eu-activated phosphor and GaN LED chip)
IT **178561-91-6** 181024-45-3, Gallium indium nitride **207237-48-7**
(LED display using Eu-activated phosphor and GaN-based LED chip)

L15 ANSWER 5 OF 5 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 125:180853 HCA
TITLE: **Luminous** phosphor
INVENTOR(S): Murazaki, Yoshinori; Tamaoki, Hiroto
PATENT ASSIGNEE(S): Nichia Kagaku Kogyo Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08151574	A2	19960611	JP 1995-222843	19950831
JP 3232549	B2	20011126		
JP 2002020744	A2	20020123	JP 2001-203455	19950831

PRIORITY APPLN. INFO.: JP 1994-234606 A1 19940929
JP 1995-222843 A3 19950831

AB A **luminous** phosphor having enhanced heat and water resistant properties, consists of Eu2+-activated aluminate represented by (M1-p-qEupQq)O.bul.n(Al1-mBm)2O3.bul.kP2O3 [0.0001.ltoreq.p.ltoreq.0.5, 0,0001.ltoreq.q.ltoreq.0.5, 0.5.ltoreq.n.ltoreq.3.0, 0.0001.ltoreq.m.ltoreq.0.5, 0.ltoreq.k.ltoreq.0.2, and 0.0002.ltoreq.p+q.ltoreq.0.75; M is divalent metal(s) selected from Mg, Ca, Sr, Ba, and Zn; and Q is coactivator(s) selected from Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu].
IT **180634-19-9 180634-20-2 180634-21-3 180634-22-4 180634-23-5 180634-24-6**
(**luminous** phosphor)
RN 180634-19-9 HCA
CN Aluminum dysprosium europium strontium borate oxide phosphate

(Al1.73Dy0.02Eu0.03Sr0.96(BO3)0.09O3.37(PO4)0.06) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.37	17778-80-2
O4P	0.06	14265-44-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

RN 180634-20-2 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.73Dy0.02Eu0.03Sr0.96(BO3)0.09O3.46) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.46	17778-80-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

RN 180634-21-3 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.73Dy0.02Eu0.03Sr0.95(BO3)0.09O3.46) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.46	17778-80-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

RN 180634-22-4 HCA
CN Aluminum dysprosium europium strontium borate oxide phosphate (Al1.84Dy0.02Eu0.03Sr0.96(BO3)0.1O3.59(PO4)0.02) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.59	17778-80-2
O4P	0.02	14265-44-2

BO3	0.1	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.84	7429-90-5

RN 180634-23-5 HCA
CN Aluminum dysprosium europium strontium borate oxide phosphate (Al1.62Dy0.02Eu0.03Sr0.96(BO3)0.08O3.14(PO4)0.1) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.14	17778-80-2
O4P	0.1	14265-44-2
BO3	0.08	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.62	7429-90-5

RN 180634-24-6 HCA
CN Aluminum dysprosium europium strontium borate oxide phosphate (Al1.66Dy0.02Eu0.03Sr0.96(BO3)0.09O3.13(PO4)0.16) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.13	17778-80-2
O4P	0.16	14265-44-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.66	7429-90-5

IC ICM C09K011-71
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **luminous** phosphor europium activated aluminate
IT Phosphors
(**luminous** phosphor)
IT **180634-19-9 180634-20-2 180634-21-3**
180634-22-4 180634-23-5 180634-24-6
(**luminous** phosphor)

=> d l16 1-3 ibib abs hitstr hitind

L16 ANSWER 1 OF 3 HCA COPYRIGHT 2002 ACS

ACCESSION NUMBER: 129:178968 HCA
TITLE: Afterglow coloring materials with good peeling resistance for painting of ceramics
INVENTOR(S): Oishi, Tomohiro; Sawaguchi, Shoji; Ohata, Seizo; Murasaki, Yoshinori; Tamaoki, Hiroto; Ichinomiya, Keiji
PATENT ASSIGNEE(S): Gifu Prefecture, Japan; Nichia Chemical Industries Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10194871	A2	19980728	JP 1996-358302	19961226
JP 2951902	B2	19990920		

AB The coloring materials consist of 100 wt. parts of a Pb-free frit, binder and 2-50 wt. parts of a fluorescent substance having a general formula of (M1-p-q, EupQq)O.n(Al1-mBm)2O3, where 0.0001.ltoreq.P.ltoreq.0.5, 0.0001.ltoreq.q.ltoreq.0.5, 1.5.ltoreq.n.ltoreq.3.0, 0.ltoreq.m.ltoreq.0.5, M is .gtoreq.1 of Mg, Ca, Sr, Ba, and Zn, Q is .gtoreq.1 of Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu, and the frit contains at least CaO, MgO and ZnO.

IT **211365-55-8**
(fluorecent substance; in afterglow coloring materials with good peeling resistance for painting of ceramics)

RN 211365-55-8 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al3.52Dy0.02Eu0.01Sr0.97(BO3)0.05O3.85) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.85	17778-80-2
BO3	0.05	14213-97-9
Eu	0.01	7440-53-1
Sr	0.97	7440-24-6
Dy	0.02	7429-91-6
Al	3.52	7429-90-5

IC ICM C04B041-86
CC 57-2 (Ceramics)
IT **211365-55-8**
(fluorecent substance; in afterglow coloring materials with good peeling resistance for painting of ceramics)

L16 ANSWER 2 OF 3 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 126:164021 HCA

TITLE: Afterglow lamps
INVENTOR(S): Murazaki, Yoshinori; Ichinomiya, Keiji
PATENT ASSIGNEE(S): Nichia Chemical Industries, Ltd., Japan
SOURCE: Ger. Offen., 17 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19620631	A1	19961205	DE 1996-19620631	19960522
JP 09050786	A2	19970218	JP 1996-52968	19960311
GB 2301372	A1	19961204	GB 1996-9495	19960507
GB 2301372	B2	19981202		
US 5859496	A	19990112	US 1996-644418	19960510
NL 1003200	A1	19961202	NL 1996-1003200	19960524
NL 1003200	C2	19970725		
CN 1148729	A	19970430	CN 1996-107921	19960527

PRIORITY APPLN. INFO.: JP 1995-130609 19950529
JP 1996-52968 19960311

AB Lamps are described which comprise a light-emitting component for converting elec. energy into light and a fluorescent layer (e.g., on the envelope) incorporating a phosphor with a long afterglow time which is described by the general formula (M1-p-qEupQq)O.n(Al1-mBm)2O3.kP2O5..alpha.X (0.0001 .ltoreq. p .ltoreq. 0.5; 0.0001 .ltoreq. q .ltoreq. 0.5; 0.05 .ltoreq. n .ltoreq. 3.0; 0 .ltoreq. m .ltoreq. 0.5; 0 .ltoreq. k .ltoreq. 0.2; 0 .ltoreq. .alpha. .ltoreq. 0.5; 0 .ltoreq. .alpha./n .ltoreq. 0.4; M = .gtoreq.1 divalent metal selected from Mg, Ca, Sr, Ba, and Zn; Q = a coactivator selected from .gtoreq.1 of Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu; and X = .gtoreq.1 element selected from F, Cl, Br, and I). The afterglow from the phosphors allows for continued, if subdued, illumination in the event of power failures.

IT **180634-20-2**
(lamps employing fluorescent layers incorporating persistent phosphors)

RN 180634-20-2 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.73Dy0.02Eu0.03Sr0.96(BO3)0.09O3.46) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.46	17778-80-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

IT **180634-21-3**
(thulium-doped; lamps employing fluorescent layers incorporating persistent phosphors)
RN 180634-21-3 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.73Dy0.02Eu0.03Sr0.95(BO3)0.09O3.46) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.46	17778-80-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

IC ICM H05B033-14
ICS H01J040-18; H01J001-62; F21V009-16
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT 180634-19-9 **180634-20-2** 180634-22-4 180634-23-5
186890-65-3 186890-66-4 186890-71-1
(lamps employing fluorescent layers incorporating persistent phosphors)
IT **180634-21-3** 186890-70-0
(thulium-doped; lamps employing fluorescent layers incorporating persistent phosphors)

L16 ANSWER 3 OF 3 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 125:71267 HCA
TITLE: Long after grow phosphors
INVENTOR(S): Murazaki, Yoshinori; Tamaoki, Hiroto; Maachin, Robaato Roisu
PATENT ASSIGNEE(S): Nichia Kagaku Kogyo Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08073845	A2	19960319	JP 1995-161834	19950628
JP 3232548	B2	20011126		

PRIORITY APPLN. INFO.: JP 1994-147912 A 19940629
AB The phosphor, comprising an Eu2+ activated aluminate, has the formula: (M1-p-qEupQq)O.cntdot.n(Al1-mBm)2O3 (0.0001.ltoreq. p .ltoreq.0.5, 0.0001.ltoreq. q .ltoreq.0.5, 0.5.ltoreq. n .ltoreq.3.0, 0.0001.ltoreq. m .ltoreq.0.5, 0.0001.ltoreq. (p+q) .ltoreq.0.75; M = a divalent metal selected from Mg, Ca, Sr, Ba,

and/or Zn; Q = a co-activator selected from Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and/or Lu). The phosphor may have a monoclinic system and have the above formula satisfying 0.5.ltoreq. n .ltoreq.1.5, where .gtoreq.70 % of M being Sr. The phosphor may have a monoclinic system and have the above formula satisfying 0.5.ltoreq. n .ltoreq.1.5, where .gtoreq.70 % of M being Ca. The phosphor may have a rhombic system and have the above formula satisfying 0.5.ltoreq. n .ltoreq.1.5, where .gtoreq.70 % of M being Sr. The phosphor may have a rhombic system and the above formula satisfying 1.7.ltoreq. n .ltoreq.1.8, where M being Sr.

IT **178561-90-5**

(Dy, Ho,Pr, or Tm doped; long decay phosphor of europium-activated aluminate)

RN 178561-90-5 HCA

CN Aluminum calcium europium neodymium borate oxide (Al1.84Ca0.96Eu0.02Nd0.03(BO3)0.1O3.62) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.62	17778-80-2
BO3	0.1	14213-97-9
Ca	0.96	7440-70-2
Eu	0.02	7440-53-1
Nd	0.03	7440-00-8
Al	1.84	7429-90-5

IT **178561-91-6**

(Tm doped; long after grow phosphor of europium-activated aluminate)

RN 178561-91-6 HCA

CN Aluminum dysprosium europium strontium borate oxide (Al1.98Dy0.02Eu0.03Sr0.95(BO3)0.02O3.93) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.93	17778-80-2
BO3	0.02	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.98	7429-90-5

IT **178561-86-9 178561-92-7**

(Tm doped; long decay phosphor of europium-activated aluminate)

RN 178561-86-9 HCA

CN Aluminum dysprosium europium strontium borate oxide (Al1.95Dy0.02Eu0.03Sr0.95(BO3)0.05O3.85) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	3.85	17778-80-2
BO3	0.05	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.95	7429-90-5

RN 178561-92-7 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.6Dy0.02Eu0.03Sr0.95(BO3)0.4O2.8) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.8	17778-80-2
BO3	0.4	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.6	7429-90-5

IT **178561-87-0**
(Tm, Lu, or Nb doped; long decay phosphor of europium-activated aluminate)
RN 178561-87-0 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.9Dy0.02Eu0.03Sr0.95(BO3)0.1O3.7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.7	17778-80-2
BO3	0.1	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.9	7429-90-5

IC ICM C09K011-64
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT **178561-90-5**
(Dy, Ho,Pr, or Tm doped; long decay phosphor of europium-activated aluminate)
IT **178561-91-6**
(Tm doped; long after grow phosphor of europium-activated aluminate)
IT **178561-86-9 178561-92-7**
(Tm doped; long decay phosphor of europium-activated aluminate)
IT **178561-87-0**
(Tm, Lu, or Nb doped; long decay phosphor of europium-activated

aluminate)

=> d l35 1-4 ibib abs hitstr hitind

L35 ANSWER 1 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 119:188644 HCA
TITLE: Composition for coating of metallic dental prosthesis
INVENTOR(S): Dyakonenko, Elena E.; Inozemtseva, Alevtina A.; Serova, Galina A.; Dorfman, Lyubov M.
PATENT ASSIGNEE(S): Central Scientific-Research Institute of Stomatology, USSR
SOURCE: U.S.S.R. From: Izobreteniya 1993, (1), 15. CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1785683	A1	19930107	SU 1990-4892023	19901218

AB A mixt. of inorg. oxides is used as a coating to improve the appearance of metallic dental prostheses. The mixt. has the compn.: aluminum oxide 12.81-12.88, potassium oxide 11.85-11.89, sodium oxide 6.23-6.29, magnesium oxide 1.18-1.25, calcium oxide 4.07-4.09, boron oxide 2.48-2.93 wt.% with the balance silicon oxide.

IT **150389-43-8**
(metallic dental prosthetics coating with)

RN 150389-43-8 HCA
CN Aluminum oxide (Al2O3), mixt. with boron oxide (B2O3), calcium oxide (CaO), magnesium oxide (MgO), potassium oxide (K2O), silica and sodium oxide (Na2O) (9CI) (CA INDEX NAME)

CM 1

CRN 12136-45-7
CMF K2 O

K—O—K

CM 2

CRN 7631-86-9
CMF O2 Si

O═Si═O

CM 3

CRN 1344-28-1
CMF Al2 O3
CCI MAN
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 4

CRN 1313-59-3
CMF Na2 O

Na—O—Na

CM 5

CRN 1309-48-4
CMF Mg O

Mg═O

CM 6

CRN 1305-78-8
CMF Ca O

Ca═O

CM 7

CRN 1303-86-2
CMF B2 O3
CCI MAN
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM A61K006-02
CC 63-7 (Pharmaceuticals)
IT **150389-43-8**
(metallic dental prosthetics coating with)

L35 ANSWER 2 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 92:63269 HCA
TITLE: Cermet material
INVENTOR(S): Chubarov, V. M.; Kalabukhova, S. V.; Tumanov, V. A.; Khazov, V. A.; Zabavnova, A. P.
PATENT ASSIGNEE(S): USSR

SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1979, (34), 117. CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 685650	T	19790915	SU 1977-2451870	19770210

AB The impact toughness, strength, and oxidn. resistance are increased by adding ZrO2 16-24, Nd2O3 3.6-5.4, B2O3 4.2-6.3, La0.2-0.3, V 0.2-0.3, and Ta 0.2 to the cermet contg. corundum 16.2-24.3 and Cr 39.5-59.25%.
IT **72689-49-7**
(with impact toughness and oxidn. resistance)
RN 72689-49-7 HCA
CN Chromium alloy, base, Cr 40-59,corundum (Al2O3) 16-24,ZrO2 16-24,B2O3 4.2-6.3,Nd2O3 3.6-5.4,La 0.2-0.3,V 0.2-0.3,Ta 0.2 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cr	40 - 59	7440-47-3
Al2O3	16 - 24	1302-74-5
ZrO2	16 - 24	1314-23-4
B2O3	4.2 - 6.3	1303-86-2
Nd2O3	3.6 - 5.4	1313-97-9
La	0.2 - 0.3	7439-91-0
V	0.2 - 0.3	7440-62-2
Ta	0.2	7440-25-7

IC C04B035-70
CC 56-3 (Nonferrous Metals and Alloys)
IT **72689-49-7**
(with impact toughness and oxidn. resistance)

L35 ANSWER 3 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 85:196876 HCA
TITLE: Spinel and aluminum-base metal cermet
INVENTOR(S): Wilson, Lois E.
PATENT ASSIGNEE(S): Corning Glass Works, USA
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 3973977	A	19760810	US 1975-619675	19751006
US 3940276	A	19760224	US 1973-411947	19731101

PRIORITY APPLN. INFO.: US 1973-411947 19731101

AB The cermet [**60994-40-3**] useful for abrasives consists of submicron grains of Mg aluminate spinel .ltoreq.60, .alpha.-Al2O3 .ltoreq.10, mullite .ltoreq.2, MgAlB14 .ltoreq.5, and finely dispersed Al-Si alloy 10-30 wt.%. The cermet is prepd. by contacting a glass-B2O3 powder mixt. with molten Al at 650-750 or 650-850.degree. for glasses contg. .ltoreq.8 MgO or .gtoreq.8% MgO, resp. The mixt. consists of .ltoreq.35 B2O3 and .gtoreq.65% glass (MgO 5-40, Al2O3 5-43, SiO2 35-85%). On contact, the Al reacts with the mixt. and forms the cermet. Adhering coatings of the Al-Si alloy on the cermet segments are selectively removed by immersion in hot NaOH soln. The washed segments are flexed to sep. the cermet particles.

IT **60994-40-3**
(for abrasives)

RN 60994-40-3 HCA

CN Aluminum oxide (Al2O3), alloy, Al2O3 54-69,Al 16-25,B2O3 0-18,MgO 7.8-15,Si 0.2 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Al2O3	54 - 69	1344-28-1
Al	16 - 25	7429-90-5
B2O3	0 - 18	1303-86-2
MgO	7.8 - 15	1309-48-4
Si	0.2	7440-21-3

IC C04B035-44
NCL 106062000
CC 56-3 (Nonferrous Metals and Alloys)
Section cross-reference(s): 57

IT **60994-40-3**
(for abrasives)

L35 ANSWER 4 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 85:50677 HCA
TITLE: Spinel and aluminum-base metal cermet
INVENTOR(S): Wilson, Lois E.
PATENT ASSIGNEE(S): Corning Glass Works, USA
SOURCE: U.S., 9 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 3940276 A 19760224 US 1973-411947 19731101
US 3973977 A 19760810 US 1975-619675 19751006
PRIORITY APPLN. INFO.: US 1973-411947 19731101

AB The dense, coherent, homogeneous cermet consists of Mg aluminate spinel .gtoreq.60, .alpha.-Al2O3 .ltoreq.10, mullite .ltoreq.2, Mg Al boride .ltoreq.5, and Al phase 10-30 wt.%. On contact with molten Al at 650-850.degree., a glass reacts to form the cermet. Si in the glass is replaced by Al. The cermets are useful as abrasive grain and/or abrasive articles. Thus, glass (SiO2-20Al2O3-12.4MgO-4.76%B2O3) ribbon segments were reacted with molten 99.99% Al at 700.degree. to form a cermet. After leaching off the external Al layer with aq. NaOH and washing, loose octahedral abrasive grains 95% -8 +10 mesh were obtained by flexing the segments. Chem. anal. of the cermet was Al2O3 67.22, MgO 8.71, B2O3 2.63, Al 20.0, and Si 0.24%.

IT **59927-29-6**
(abrasive grains of cermet)

RN 59927-29-6 HCA
CN Aluminum oxide (Al2O3), alloy, Al2O3 54-76,Al 12-25,B2O3 0-18,MgO 7.9-15,Si 0-0.2 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Al2O3	54 - 76	1344-28-1
Al	12 - 25	7429-90-5
B2O3	0 - 18	1303-86-2
MgO	7.9 - 15	1309-48-4
Si	0 - 0.2	7440-21-3

IC C04B
NCL 106062000
CC 56-3 (Nonferrous Metals and Alloys)
Section cross-reference(s): 57

IT **59927-29-6**
(abrasive grains of cermet)

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L23 ANSWER 1 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 136:223585 HCA
TITLE: Effect of host composition on **luminescent** properties of activated SrAl2B2O7 phosphors
AUTHOR(S): Lin, Chia-pin; Chen, Teng-ming
CORPORATE SOURCE: Institute of Applied Chemistry, National Chiao Tung University, Hsinchu, 30050, Taiwan
SOURCE: Zhongguo Xitu Xuebao (2001), 19(6), 498-501
CODEN: ZXXUE5; ISSN: 1000-4343
PUBLISHER: Yejin Gongye Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB Alk. earth metal dialuminodiborates were reported to be hosts with better crystallinity, lower synthetic temp. and higher radiant efficiency, compared to corresponding borates or aluminates. Host compn. effect on the **luminescent** properties of SrAl2B2O7:Eu2+ phases was studied by systematically substituting Sr2+ with Ca2+ or Ba2+. The emission of Eu2+ attributed to the 4f65d1.fwdarw.4f7 transition is very sensitive to the changes of crystal field of the host due to Ca2+ and Ba2+ substitution, as indicated by the **luminescence** (PL). The synthesis dopant-content dependent PL and the decay lifetimes are presented.

IT **402865-28-5**, Aluminum europium strontium borate oxide (Al2Eu0.01Sr0.99(BO3)2O) **402865-33-2**, Aluminum calcium europium borate oxide (Al2Ca0.99Eu0.01(BO3)2O) **402865-38-7**, Aluminum barium europium borate oxide (Al2Ba0.99Eu0.01(BO3)2O)
(host compn. effect on **luminescence** of activated phosphor)

RN 402865-28-5 HCA
CN Aluminum europium strontium borate oxide (Al2Eu0.01Sr0.99(BO3)2O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
BO3	2	14213-97-9
Eu	0.01	7440-53-1
Sr	0.99	7440-24-6
Al	2	7429-90-5

RN 402865-33-2 HCA
CN Aluminum calcium europium borate oxide (Al2Ca0.99Eu0.01(BO3)2O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2

BO3	2	14213-97-9
Ca	0.99	7440-70-2
Eu	0.01	7440-53-1
Al	2	7429-90-5

RN 402865-38-7 HCA
CN Aluminum barium europium borate oxide (Al2Ba0.99Eu0.01(BO3)2O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
BO3	2	14213-97-9
Eu	0.01	7440-53-1
Ba	0.99	7440-39-3
Al	2	7429-90-5

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST strontium aluminate borate phosphor host compn europium **luminescence**
IT **Luminescence**
(alk. earth europium aluminum borate host compn. effect on)
IT Phosphors
(alk. earth europium aluminum borate host compn. effect on **luminescence** of activated)
IT Crystallinity
Ligand field theory
(alk. earth europium aluminum borate host compn. effect on **luminescence** of activated phosphors in relation to)
IT **402865-28-5**, Aluminum europium strontium borate oxide (Al2Eu0.01Sr0.99(BO3)2O) 402865-29-6 402865-30-9 402865-31-0 402865-32-1 **402865-33-2**, Aluminum calcium europium borate oxide (Al2Ca0.99Eu0.01(BO3)2O) 402865-34-3 402865-35-4 402865-36-5 402865-37-6 **402865-38-7**, Aluminum barium europium borate oxide (Al2Ba0.99Eu0.01(BO3)2O)
(host compn. effect on **luminescence** of activated phosphor)

L23 ANSWER 2 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 132:294974 HCA
TITLE: Light-storing thermoplastic elastomer compositions with good mechanical properties and high and long-afterglow **luminescence**
INVENTOR(S): Kanenari, Daisuke; Hara, Yuichi; Yamauchi, Shigeru; Soeda, Yoshihiro
PATENT ASSIGNEE(S): Yokohama Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000119448	A2	20000425	JP 1998-293917	19981015

AB The compns. comprise thermoplastic resins as continuous phases, rubber compns. as disperse phases, and 5-50 phr light-storing fluorescent materials. Thus, FM 131 (polypropylene) 60, Mitsui EPT 4070 (EPDM) 40, peroxide 2, and **Luminova** G 300 (SrAl2O4:Eu,Dy) 30 parts were mixed to give a compn. showing high **luminance** for .apprx.1 h, breaking strength 25.4 MPa, breaking elongation 390%, and Izod impact strength 18.6 kJ/m2.

IT **141589-22-2**, Aluminum boron europium strontium oxide
(Eu- and Nd-doped; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)

RN 141589-22-2 HCA
CN Aluminum boron europium strontium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Eu	x	7440-53-1
B	x	7440-42-8
Sr	x	7440-24-6
Al	x	7429-90-5

IC ICM C08L021-00
ICS C08K003-10; C08L101-00; C09K011-64
CC 39-9 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 37

IT Acrylic rubber
(Et acrylate, epoxy-contg., Nipol AR 31; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)

IT Polyester rubber
(butanediol-polytetramethylene glycol-terephthalic acid, block, Hytrel 5577; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)

IT Polyester rubber
Synthetic rubber, properties
(butanediol-polytetramethylene glycol-terephthalic acid, block, block, Hytrel 5577; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)

IT EPDM rubber
(ethylene-ethylidenenorbornene-propene, EPT 4070; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)

IT Synthetic rubber, properties
(isobutylene-methylstyrene, brominated, Exxpro 89-4; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT Fluorescent substances
(light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 76125-60-5, Aluminum strontium oxide (Al14Sr4O25)
(Eu- and Dy-doped; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 12042-68-1, Aluminum calcium oxide (Al2CaO4) **141589-22-2**, Aluminum boron europium strontium oxide
(Eu- and Nd-doped; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 12004-37-4, Aluminum strontium oxide (SrAl2O4)
(Eu-doped; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 7440-00-8, Neodymium, uses
(aluminum calcium oxide doped with; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 7429-91-6, Dysprosium, uses 7440-53-1, Europium, uses
(aluminum strontium oxide doped with; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 212325-45-6, **Luminova** G 300
(light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 9003-07-0, FM 131 24993-04-2, 5013B
(light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)
IT 25038-36-2, Ethylene-ethylidenenorbornene-propene copolymer 61128-14-1D, Isobutylene-p-methylstyrene copolymer, brominated 106159-00-6, Butanediol-polytetramethylene glycol-terephthalic acid block copolymer
(rubber; light-storing thermoplastic elastomer compns. with good mech. properties and high and durable **luminescence**)

L23 ANSWER 3 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 132:153172 HCA
TITLE: Light-storing rubber compositions
INVENTOR(S): Kanenari, Daisuke; Yamauchi, Shigeru; Hara, Yuichi; Soida, Yoshihiro
PATENT ASSIGNEE(S): Yokohama Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000044733	A2	20000215	JP 1998-220190	19980804

AB Title carbon black-free compns. contain 100 parts synthetic rubbers and 5-200 parts light-storing fluorescent substances SrAl2O4:Eu,Dy; Sr4Al14O25:Eu,Dy; CaAl2O4:Eu,Nd; SrAl2O4:Eu; and m(Sr1-xEux)O.nAl2O3.yB2O3 (m = 1-5; n = 1-8; x = 0.001-0.1; yr = 0.005-0.35) and are crosslinkable by org. peroxides. A compn. contg. Nipol 1502 100, SiO2 20, Perkadox 14/40 5, and **Luminova** G 300 (SrAl2O4:Eu,Dy) 30 parts was vulcanized at 160.degree. for 20 min to form a white product showing durable **luminescence** over 1 h after illuminating with 200 Lx light source for 10 min.

IT **141589-22-2**, Aluminum boron europium strontium oxide (org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

RN 141589-22-2 HCA

CN Aluminum boron europium strontium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Eu	x	7440-53-1
B	x	7440-42-8
Sr	x	7440-24-6
Al	x	7429-90-5

IC ICM C08L021-00
ICS C08K003-24; C08K003-38; C08K005-14; C09K011-64

CC 39-9 (Synthetic Elastomers and Natural Rubber)

IT Styrene-butadiene rubber, uses
(Nipol 1502; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT Butyl rubber, uses
(brominated, Bromobutyl 2255; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT EPDM rubber
(ethylene-ethylidenenorbornene-propene, EPT 4070; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT Isoprene rubber, uses
(of cis-1,4-configuration, Nipol IR 2200; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT Fluorescent substances
(org. peroxide-crosslinkable fluorescent substance- and

SiO2-contg. synthetic rubbers with durable **luminesc nce**
)

IT Peroxides, uses
(org.; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**
)

IT 7440-00-8, Neodymium, uses
(Ca aluminate activated by; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 7440-53-1, Europium, uses
(Ca or Sr aluminate activated by; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 76125-60-5, Strontium aluminate (sr4al14o25)
(Eu- and Dy-activated; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 12042-68-1, Calcium aluminate(CaAl2O4)
(Eu- and Nd-activated; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 12004-37-4, Strontium aluminate (sral2o4)
(Eu-activated; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 7429-91-6, Dysprosium, uses
(Sr aluminate activated by; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 9010-85-9
(butyl rubber, brominated, Bromobutyl 2255; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 9003-31-0
(isoprene rubber, of cis-1,4-configuration, Nipol IR 2200; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

IT 2212-81-9, Perkadox 14/40
(org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**
)

IT **141589-22-2**, Aluminum boron europium strontium oxide
212325-45-6, **Luminova** G 300
(org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**
)

IT 25038-36-2, Ethylene-ethylidenenorbornene-propene copolymer
(rubber; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**
)

IT 9003-55-8

(styrene-butadiene rubber, Nipol 1502; org. peroxide-crosslinkable fluorescent substance- and SiO2-contg. synthetic rubbers with durable **luminescence**)

L23 ANSWER 4 OF 4 HCA COPYRIGHT 2002 ACS
ACCESSION NUMBER: 129:115032 HCA
TITLE: Synthesis of a blue-green emitting phosphor
AUTHOR(S): Li, Yulin; Qu, Cunde; Gao, Zhengzhong
CORPORATE SOURCE: Department of Applied Chemistry, Beijing University of Chemical Technology, Beijing, 100029, Peop. Rep. China
SOURCE: Beijing Huagong Daxue Xuebao, Ziran Kexueban (1998), 25(1), 66-70
CODEN: BHDKFA; ISSN: 1007-2640
PUBLISHER: Beijing Huagong Daxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB A blue-green emitting phosphor with the emission peak at 487 nm was synthesized. The effect of some alkali earth ions substituting in part for Sr2+ in Sr aluminate was studied. The influence and quantity of flux and addn. of small quantity of P on the **luminance** of resultant phosphor was examd. The different calcination temp. of boehmite significantly affects the **luminance** of resultant phosphor. The XRD, **lumen** endurance and thermal stability were measured. All the resultant phosphor can be used for manufg. multiband emission fluorescent lamp with high color rendering index.

IT **209913-10-0**, Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.68(BO3)0.2O24.4) **209913-11-1**, Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.48(BO3)0.4O23.8) **209913-12-2**, Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.08(BO3)0.8O22.6)
(synthesis of blue-green emitting phosphor)

RN 209913-10-0 HCA
CN Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.68(BO3)0.2O24.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	24.4	17778-80-2
BO3	0.2	14213-97-9
Er	0.12	7440-52-0
Sr	3.68	7440-24-6
Al	14	7429-90-5

RN 209913-11-1 HCA
CN Aluminum europium strontium borate oxide (Al14Eu0.12Sr3.48(BO3)0.4O23.8) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	23.8	17778-80-2
BO3	0.4	14213-97-9
Eu	0.12	7440-53-1
Sr	3.48	7440-24-6
Al	14	7429-90-5

RN 209913-12-2 HCA
CN Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.08(BO3)0.8O22.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	22.6	17778-80-2
BO3	0.8	14213-97-9
Er	0.12	7440-52-0
Sr	3.08	7440-24-6
Al	14	7429-90-5

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT 122434-42-8, Aluminum europium strontium oxide (Al14Eu0.12Sr3.88O25) **209913-10-0**, Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.68(BO3)0.2O24.4) **209913-11-1**, Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.48(BO3)0.4O23.8) **209913-12-2**, Aluminum erbium strontium borate oxide (Al14Er0.12Sr3.08(BO3)0.8O22.6)
(synthesis of blue-green emitting phosphor)

=> d l25 1-11 cbib abs hitstr hitind

L25 ANSWER 1 OF 11 HCA COPYRIGHT 2002 ACS
134:346307 Heat resistant, water resistant bright long afterglow yellow green **luminescent** phosphor and its production. Sumida, Yukio; Mo, Ping Fan (Lead Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001131544 A2 20010515, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-316624 19991108.
AB The invention refers to a yellow green **luminescent** phosphor (Sr2-n-m-k-qE'nEumLnkYq)rAl2O4: Bx,Fy [0 .ltoreq. n .ltoreq. 0.1; 0 .ltoreq. m .ltoreq. 0.05; 0 .ltoreq. k .ltoreq. 0.1; 0 .ltoreq. q .ltoreq. 0.5; 0 .ltoreq. r .ltoreq. 1.5; 0 .ltoreq. x .ltoreq. 0.1 ; 0 .ltoreq. y .ltoreq. 0.1; E' = Mn, Bi, Ca, Mg, or Ba; Ln = Ce, Pr, Gd, Tb, Dy, Ho, Er, Tm, Yb, or Lu].
IT **337509-28-1 337509-33-8 337509-35-0**
(heat resistant, water resistant, bright long afterglow yellow green **luminesc nt** phosphor and prodn.)
RN 337509-28-1 HCA
CN Aluminum dysprosium strontium borate fluoride oxide (Al2Dy0.01Sr0.99(BO3)0.04F0.06O3.88) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.88	17778-80-2
F	0.06	14762-94-8
BO3	0.04	14213-97-9
Sr	0.99	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

RN 337509-33-8 HCA
CN Aluminum dysprosium strontium borate fluoride oxide (Al2Dy0.01Sr0.98(BO3)0.1F0.07O3.7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.7	17778-80-2
F	0.07	14762-94-8
BO3	0.1	14213-97-9
Sr	0.98	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

RN 337509-35-0 HCA
CN Aluminum dysprosium strontium borate fluoride oxide (Al2Dy0.01Sr0.98(BO3)0.03F0.05O3.91) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.91	17778-80-2
F	0.05	14762-94-8
BO3	0.03	14213-97-9
Sr	0.98	7440-24-6
Dy	0.01	7429-91-6
Al	2	7429-90-5

IC ICM C09K011-64
ICS C09K011-08; C09K011-80
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST phosphor yellow green **luminescence**
IT Phosphors
Thermal resistance
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)
IT **337509-28-1** 337509-29-2 337509-30-5 337509-31-6
337509-32-7 **337509-33-8** 337509-34-9 **337509-35-0**
337509-36-1 337509-37-2 337509-38-3 337509-39-4 337509-40-7
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)

IT 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-30-4, Thulium, uses 7440-53-1, Europium, uses 7440-65-5, Yttrium, uses 7440-69-9, Bismuth, uses
(heat resistant, water resistant, bright long afterglow yellow green **luminescent** phosphor and prodn.)

L25 ANSWER 2 OF 11 HCA COPYRIGHT 2002 ACS
134:48957 Bolts with **luminescent** markings and **luminescent** marking material. Nakajima, Hiroshi (Nakajima Kogyo Y. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000346024 A2 20001212, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-154046 19990601.

AB Bolts are described which are provided with a persistent phosphor marking in conjunction with a light-collecting structure in the bolt head. By providing the bolt head with sections with a persistent phosphor marking and with a fluorescent material marking, visibility under both well lit and darkened conditions may be assured. Preferably, the phosphor is a calcined phosphor are described by the general formula (M1-p-qEupQq)O.n(Al1-mBm)2O3 (0.0001 .ltoreq. p .ltoreq. 0.5; 0.0001 .ltoreq. Q .ltoreq. 0.5; 1.5 .ltoreq. N .ltoreq. 3.0; 0 .ltoreq. m .ltoreq. 0.5; M = Mg, Ca, Sr, Ba, and/or Zn; Q = Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and/or Lu).

IT **313216-32-9P**
(bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

RN 313216-32-9 HCA

CN Aluminum dysprosium europium strontium borate oxide (Al3.51Dy0.02Eu0.01Sr0.97(BO3)0.05O6.19) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.19	17778-80-2
BO3	0.05	14213-97-9
Eu	0.01	7440-53-1
Sr	0.97	7440-24-6
Dy	0.02	7429-91-6
Al	3.51	7429-90-5

IC ICM F16B033-06
ICS C04B041-86; F16B035-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST bolt **luminescent** marking persistent phosphor

IT Bolts
Fluorescent substances
(bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

IT Phosphors
(persistent; bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

IT **313216-32-9P**
(bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)
IT 7429-91-6, Dysprosium, uses 7439-94-3, Lutetium, uses 7439-96-5, Manganese, uses 7440-00-8, Neodymium, uses 7440-03-1, Niobium, uses 7440-10-0, Praseodymium, uses 7440-27-9, Terbium, uses 7440-30-4, Thulium, uses 7440-52-0, Erbium, uses 7440-54-2, Gadolinium, uses 7440-60-0, Holmium, uses 7440-64-4, Ytterbium, uses 7440-67-7, Zirconium, uses
(phosphors activated with europium and; bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)
IT 7440-53-1, Europium, uses
(phosphors activated with; bolts with **luminescent** markings including persistent phosphors and persistent **luminescent** marking material)

L25 ANSWER 3 OF 11 HCA COPYRIGHT 2002 ACS
133:105774 Phosphorescent substance-containing polymer beads with excellent water resistance and their manufacture. Ikoma, Masato; Sashimono, Kazuhiko; Sumida, Yukio; Mo, Ping Fan (Negami Kogyo K. K., Japan; Lead Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2000198938 A2 20000718, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-377362 19981228.
AB The polymer beads consist of spherical polymer particles contg. .gtoreq.1 highly rigid amorphous phosphorescent particles (prepd. by crushing sintered materials and classifying). Thus, a 60:10 parts Me methacrylate-ethylene glycol dimethacrylate was suspension polymd. in the presence of 30 parts Sr0.982Eu0.005Dy0.008Y0.005Al1.98Si0.0154 to give beads showing high **luminance** and long lifetime.
IT **281682-13-1**
(phosphorescent substance; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
RN 281682-13-1 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al11.2Dy0.02Eu0.02Sr3.6(BO3)2.8O16.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	16.6	17778-80-2
BO3	2.8	14213-97-9
Eu	0.02	7440-53-1
Sr	3.6	7440-24-6
Dy	0.02	7429-91-6
Al	11.2	7429-90-5

IC ICM C08L101-00
ICS C08F002-18; C08F002-44; C08K003-34; C09C003-10; C09K011-64; C09K011-66

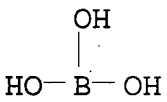
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 73
ST phosphorescent dispersibility polymer bead high **luminance**; acrylic polymer suspension polymn strontium aluminate; aluminum dysprosium europium strontium oxide **luminescence**
IT Silicone rubber, properties
(TSE 3032, crosslinked, beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Polyesters, properties
(beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Dispersing agents
Phosphorescent substances
(manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Epoxy resins, properties
(polyamine-crosslinked; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Polyurethanes, properties
(polyester-, beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT Polymerization
(suspension; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 9003-70-7P, Divinylbenzene-styrene copolymer 25777-71-3P, Ethylene glycol dimethacrylate-methyl methacrylate copolymer
(beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 198974-92-4, Vylon 200, polymer with Coronate HX 281658-99-9 281659-00-5
(beads; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 9002-89-5, Poval 220 9003-39-8, PVP K 90 9004-65-3, Marpolose 90MP4000
(dispersing agent; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)
IT 259197-69-8 281682-09-5 281682-10-8, Aluminum strontium borate oxide (Al1.9Sr0.99(BO3)0.1O3.7) 281682-11-9 281682-12-0 **281682-13-1**
(phosphorescent substance; manuf. of phosphorescent substance-contg. polymer beads with high **luminance** and long lifetime)

L25 ANSWER 4 OF 11 HCA COPYRIGHT 2002 ACS
130:174614 **Luminescence** studies on doped borates, A6MM'(BO3)6.
Sankar, R.; Subba Rao, G. V. (Electrochemical Materials Science Division, Central Electrochemical Research Institute, Karaikudi, Tamilnadu, 630 006, India). J. Alloys Compd., 281(2), 126-136 (English) 1998. CODEN: JALCEU. ISSN: 0925-8388. Publisher: Elsevier Science S.A..
AB Select compds. of the new hexaborates A6MM'(BO3)6 were synthesized

by the solid state reaction and are subjected to **photoluminescence** studies after due characterization by powder XRD, d., TG/DTA, IR and Diffuse reflectance spectroscopy. The results of studies on the **photoluminescence** of the compds. Sr6EuM'(BO3)6 with A=Sr; M = Eu; M' = Al, Ga, In; LaSr5MM'(BO3)6: Eu with A=La, Sr; MM' = YMg, ScMg, MgAl; SmSr5YMg(BO3)6, Sr6MAl(BO3)6 with M = Gd, Dy; Sr6YAl(BO3)6: Bi, Pb; and La2Sr4SrMg(BO3)6: Pb, are presented here. A new compd. EuSr5YMg(BO3)6 also was synthesized and studied. The **luminescence** features of Eu, Sm, Gd, Dy, Bi (all 3+) and Pb2+ ions are discussed. Red emission by Eu3+ ion doped both at the A and M sites were studied at low and high Eu3+ concns. and the data analyzed with respect to the site occupancy and the possible site disorder. The positions of the emission lines depend not only on the site occupancy but also on the ions present at the M' site. The variation in Eu3+ emission intensity with its concn. reveals a near-satn. behavior, as evidenced by studies on La1-xEuxSr5YMg(BO3)6 (x = 0.05-1.0). The Pb2+ ion exhibits efficient violet **luminescence** under 254 nm excitation. These hexaborate compds. are excellent hosts for the high efficiency room temp. **luminescence** of the lanthanide (Eu, Sm, Gd, Dy) and Bi, Pb ions.

IT **158617-65-3 220478-13-7**
(**luminescence** studies on doped borates, A6MM'(BO3)6)

RN 158617-65-3 HCA
CN Boric acid (H3BO3), aluminum europium(3+) strontium salt (6:1:1:6) (9CI) (CA INDEX NAME)



1/6 Al

1/6 Eu(III)

Sr

RN 220478-13-7 HCA
CN Aluminum europium strontium yttrium borate (AlEu0.05Sr6Y0.95(BO3)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
BO3	6	14213-97-9
Y	0.95	7440-65-5
Eu	0.05	7440-53-1
Sr	6	7440-24-6
Al	1	7429-90-5

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **luminescence** rare earth doping borate
IT Reflection spectra
(UV-visible, diffuse; **luminescence** studies on doped borates, A6MM'(BO3)6)
IT Dopants
IR spectra
Luminescence
(**luminescence** studies on doped borates, A6MM'(BO3)6)
IT Rare earth ions
(**luminescence** studies on doped borates, A6MM'(BO3)6)
IT Borates
(**luminescence** studies on doped borates, A6MM'(BO3)6)
IT UV and visible spectra
(reflection, diffuse; **luminescence** studies on doped borates, A6MM'(BO3)6)
IT 14280-50-3, Lead(2+), properties 22541-18-0, Europium(3+), properties 22541-19-1, Gadolinium(3+), properties 22541-21-5, Dysprosium(3+), properties 23713-46-4, Bismuth(3+), properties
(**luminescence** studies on doped borates, A6MM'(BO3)6)
IT 129265-37-8 129265-40-3 **158617-65-3** 158617-75-5 158618-00-9 158618-15-6 158618-23-6 220477-89-4 220477-92-9 220477-97-4 **220478-13-7** 220478-15-9 220478-18-2 220478-22-8 220478-25-1 220478-27-3, Aluminum lead strontium yttrium borate (AlPb0.3Sr5.7Y(BO3)6)
(**luminescence** studies on doped borates, A6MM'(BO3)6)

L25 ANSWER 5 OF 11 HCA COPYRIGHT 2002 ACS
129:115030 Study on the influencing factors of the **luminous** intensity of 4(Sr1-xEux)0.7Al2O3.cntdot.nB2O3.cntdot.yP2O5 fluorescent material and the fluorescence lifetime of steady persistence. Yuan, Ying; Shi, Huisheng (College of Materials Science and Eng., Tongji Univ., Shanghai, 200092, Peop. Rep. China). Tongji Daxue Xuebao, Ziran Kexueban, 26(2), 185-188 (Chinese) 1998. CODEN: TTHPDJ. ISSN: 0253-374X. Publisher: Tongji Daxue Xuebao.
AB The influence of the stimulant Eu2+ concn., P2O5, B2O3 the mole concn., the drop of additive A, calcining temp., reducing atm., cooling rate and grinding fineness etc. on the **luminous** intensity is studied when 4(Sr1-xEux)0.7Al2O3.cntdot.nB2O3.cntdot.yP2O5 steady persistence fluorescent material was made. The decay curve was fit with I = I1exp(-x/t1)+I2exp(-x/t2)+I3exp(-x/t3). Three different lifetimes were found.

IT **209906-15-0**
(study on influencing factors of **luminous** intensity of)
RN 209906-15-0 HCA
CN Aluminum europium strontium borate oxide phosphate (Al1.4Eu0.08Sr3.92(BO3)0.3O1.42(PO4)0.15) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.42	17778-80-2
O4P	0.15	14265-44-2
BO3	0.3	14213-97-9
Eu	0.08	7440-53-1
Sr	3.92	7440-24-6
Al	1.4	7429-90-5

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT Fluorescence
Fluorescent substances
Phosphors
(study on influencing factors of **luminous** intensity of 4(Sr1-xEux)0.7Al2O3.cntdot.nB2O3.cntdot.yP2O5 fluorescent material)
IT **209906-15-0**
(study on influencing factors of **luminous** intensity of)
IT 1303-86-2, Boron oxide (B2O3), properties 1314-56-3, Phosphorus oxide (P2O5), properties 16910-54-6, Europium ion(2+), properties
(study on influencing factors of **luminous** intensity of 4(Sr1-xEux)0.7Al2O3.cntdot.nB2O3.cntdot.yP2O5 fluorescent material)

L25 ANSWER 6 OF 11 HCA COPYRIGHT 2002 ACS
128:328886 **Electroluminescent** device and light-emitting diode containing divalent europium-activated phosphor and display device using them. Kumeta, Shinji (Nichia Chemical Industries Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10112557 A2 19980428 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-266450 19961008.
AB The **electroluminescent** (EL) device comprises a GaN-based LED chip with main emission peak 360-530 nm and a divalent Eu-activated phosphor (M1-p-qEupQq)O.n(Al1-mBm)2O3 [I; p = 0.0001-0.5; q = 0.0001-0.5; n = 0.5-10; m = 0-0.5; p + q = 0.0002-0.75; M = Mg, Ca, Sr, Ba, and/or Zn; Q (coactivator) = Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and/or Lu]. The LED comprises a GaN-based LED chip coated with a I-contg. translucent polymer. The display device comprises a display unit contg. .gtoreq.2 EL devices and an elec. connected driving circuit. The EL device shows high emission, long service time, and low driving voltage.
IT **178561-91-6**
(LED display using Eu-activated phosphor and GaN-based LED chip)

RN 178561-91-6 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.98Dy0.02Eu0.03Sr0.95(BO3)0.02O3.93) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.93	17778-80-2
BO3	0.02	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.98	7429-90-5

IC ICM H01L033-00
ICS H01L033-00; C09K011-64; G09F009-33
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST **electroluminescent** device display europium activated phosphor; gallium nitride LED **electroluminescent** display
IT **Electroluminescent** devices
Phosphors
(LED display using Eu-activated phosphor and GaN LED chip)
IT **178561-91-6** 181024-45-3, Gallium indium nitride 207237-48-7
(LED display using Eu-activated phosphor and GaN-based LED chip)

L25 ANSWER 7 OF 11 HCA COPYRIGHT 2002 ACS
125:180853 **Luminous** phosphor. Murazaki, Yoshinori; Tamaoki, Hiroto (Nichia Kagaku Kogyo Kk, Japan). Jpn. Kokai Tokkyo Koho JP 08151574 A2 19960611 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-222843 19950831. PRIORITY: JP 1994-234606 19940929.
AB A **luminous** phosphor having enhanced heat and water resistant properties, consists of Eu2+-activated aluminate represented by (M1-p-qEupQq)O.bul.n(Al1-mBm)2O3.bul.kP2O3 [0.0001.ltoreq.p.ltoreq.0.5, 0,0001.ltoreq.q.ltoreq.0.5, 0.5.ltoreq.n.ltoreq.3.0, 0.0001.ltoreq.m.ltoreq.0.5, 0.ltoreq.k.ltoreq.0.2, and 0.0002.ltoreq.p+q.ltoreq.0.75; M is divalent metal(s) selected from Mg, Ca, Sr, Ba, and Zn; and Q is coactivator(s) selected from Mn, Zr, Nb, Pr, Nd, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu].
IT **180634-20-2 180634-21-3**
(**luminous** phosphor)
RN 180634-20-2 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.73Dy0.02Eu0.03Sr0.96(BO3)0.09O3.46) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	3.46	17778-80-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.96	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

RN 180634-21-3 HCA
CN Aluminum dysprosium europium strontium borate oxide (Al1.73Dy0.02Eu0.03Sr0.95(BO3)0.09O3.46) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3.46	17778-80-2
BO3	0.09	14213-97-9
Eu	0.03	7440-53-1
Sr	0.95	7440-24-6
Dy	0.02	7429-91-6
Al	1.73	7429-90-5

IC ICM C09K011-71
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **luminous** phosphor europium activated aluminate
IT Phosphors
(**luminous** phosphor)
IT 180634-19-9 **180634-20-2 180634-21-3**
180634-22-4 180634-23-5 180634-24-6
(**luminous** phosphor)

L25 ANSWER 8 OF 11 HCA COPYRIGHT 2002 ACS
121:241369 Low pressure mercury vapor lamp and **luminescent** materials therefor. Foo, Onn Fah (Mass Technology, Hong Kong). Brit. UK Pat. Appl. GB 2271117 A1 19940406, 17 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1992-20762 19921002.
AB Low pressure mercury vapor lamps are described which have a rod-form starting electrode close to one of the main electrodes to reduce the starting voltage. The electrodes are of aluminum or nickel or nickel coated metal, and have surface coating of barium or strontium or calcium oxide. Low pressure mercury vapor lamps are also described in which the discharge tube is mounted within an external envelope having the external form of a conventional incandescent lamp, and likewise the screw or push-fit connection means thereof. A ballast resistor for the lamp is located within the screw of push-fit connector. A fluorescent coating on the inner envelope comprises rare-earth elements and converts the ultra-violet frequencies to visible wavelengths. Fluorescent powders are also described which include a green-emitting powder which may formulated from a compn. having the wt. percent constituents: basic magnesium carbonate (5-15), cerium oxide (5-15), activated carbon (1-3), boric acid (0.1-0.3) and alumina (the balance to 100). Other fluorescent

powders include a blue-emitting powder which may be represented as Ba2MgBAl20FO34Eu4, formulated from a compn. having the wt. percent constituents: europium oxide (1.2-3.5), barium carbonate (8.8-26.3), barium fluoride (0.8-2.5), basic magnesium carbonate (5.3-15.9), boric acid (0.1-0.3), activated carbon (0.3-1.1) and alumina (the balance to 100).

IT **158540-86-4P**
(phosphor; low-pressure mercury vapor lamps and **luminescent** materials for them)

RN 158540-86-4 HCA

CN Aluminum boron cerium magnesium terbium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Ce	x	7440-45-1
B	x	7440-42-8
Tb	x	7440-27-9
Mg	x	7439-95-4
Al	x	7429-90-5

IC ICM C09K011-78
ICS C09K011-80; C09K011-86; H01J061-34; H01J061-54; H01J061-72

ICA C09K011-55; C09K011-63

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

IT Phosphors
(blue-emitting, low-pressure mercury vapor lamps and **luminescent** materials for them)

IT Electric lamps
(discharge, low-pressure; low-pressure mercury vapor lamps and **luminescent** materials for them)

IT Phosphors
(green-emitting, low-pressure mercury vapor lamps and **luminescent** materials for them)

IT 7440-44-0, Carbon, reactions
(activated, phosphor precursor; low-pressure mercury vapor lamps and **luminescent** materials for them)

IT 1304-28-5, Barium oxide, uses 1305-78-8, Calcium oxide, uses 1314-11-0, Strontium oxide, uses
(electrode coating; low-pressure mercury vapor lamps and **luminescent** materials for them)

IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses
(electrode material; low-pressure mercury vapor lamps and **luminescent** materials for them)

IT 513-77-9, Barium carbonate 1308-96-9, Europium oxide 1344-28-1, Aluminum oxide (Al2O3), reactions 7787-32-8, Barium fluoride 10043-35-3, Boric acid, reactions 11129-18-3, Cerium oxide 12036-41-8, Terbium oxide 12125-28-9, Basic magnesium carbonate
(phosphor precursor; low-pressure mercury vapor lamps and

luminescent materials for them)

IT **158540-86-4P** 158540-87-5P
(phosphor; low-pressure mercury vapor lamps and **luminescent** materials for them)

L25 ANSWER 9 OF 11 HCA COPYRIGHT 2002 ACS
112:242784 Blue-emitting boroaluminate-based phosphors and **electroluminescent** lamps. Yamakawa, Masahiko; Terajima, Kenji (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho JP 01256585 A2 19891013 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-83153 19880406.

AB The title phosphors are (BaxMgyEuz)O-aAl2O3-bB2O3 (0.1 .ltoreq. x .ltoreq. 0.5; 0.1 .ltoreq. y .ltoreq. 0.8; 0.03 .ltoreq. z .ltoreq. 0.10; x + y + z = 1; 1.5 .ltoreq. a .ltoreq. 4.5; 0 < b .ltoreq. 1.0) and have **luminescent** peak at 445-455 nm wavelength. An **electroluminescent** lamp has a **luminescent** film of the phosphors. The phosphors have high **luminance** and are less deteriorated by heat than conventional phosphors.

IT **127386-06-5 127386-07-6 127386-08-7**
127386-09-8 127386-10-1 127386-11-2
127386-12-3 127386-13-4 127433-85-6
127433-86-7 127433-87-8 127433-88-9
127433-89-0 127433-90-3 127433-91-4
127433-92-5 127466-20-0 127466-21-1
(phosphor, blue-emitting, for **electroluminescent** lamps)

RN 127386-06-5 HCA
CN Aluminum barium europium magnesium borate oxide (Al4Ba0.5Eu0.1Mg0.4(BO3)1.4O4.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4.9	17778-80-2
BO3	1.4	14213-97-9
Eu	0.1	7440-53-1
Ba	0.5	7440-39-3
Mg	0.4	7439-95-4
Al	4	7429-90-5

RN 127386-07-6 HCA
CN Aluminum barium europium magnesium borate oxide (Al5Ba0.2Eu0.1Mg0.7(BO3)1.2O6.7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.7	17778-80-2
BO3	1.2	14213-97-9
Eu	0.1	7440-53-1
Ba	0.2	7440-39-3
Mg	0.7	7439-95-4
Al	5	7429-90-5

RN 127386-08-7 HCA
CN Aluminum barium europium magnesium borate oxide
(Al5Ba0.2Eu0.1Mg0.7(BO3)0.6O7.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7.6	17778-80-2
BO3	0.6	14213-97-9
Eu	0.1	7440-53-1
Ba	0.2	7440-39-3
Mg	0.7	7439-95-4
Al	5	7429-90-5

RN 127386-09-8 HCA
CN Aluminum barium europium magnesium borate oxide
(Al6Ba0.45Eu0.05Mg0.5(BO3)0.4O9.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	9.4	17778-80-2
BO3	0.4	14213-97-9
Eu	0.05	7440-53-1
Ba	0.45	7440-39-3
Mg	0.5	7439-95-4
Al	6	7429-90-5

RN 127386-10-1 HCA
CN Aluminum barium europium magnesium borate oxide
(Al4Ba0.45Eu0.05Mg0.5(BO3)0.4O6.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.4	17778-80-2
BO3	0.4	14213-97-9
Eu	0.05	7440-53-1
Ba	0.45	7440-39-3
Mg	0.5	7439-95-4
Al	4	7429-90-5

RN 127386-11-2 HCA
CN Aluminum barium europium magnesium borate oxide
(Al5Ba0.45Eu0.05Mg0.5(BO3)1.4O6.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.4	17778-80-2
BO3	1.4	14213-97-9

Eu	0.05	7440-53-1
Ba	0.45	7440-39-3
Mg	0.5	7439-95-4
Al	5	7429-90-5

RN 127386-12-3 HCA
CN Aluminum barium europium magnesium borate oxide (Al5Ba0.45Eu0.05Mg0.5(BO3)O7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
BO3	1	14213-97-9
Eu	0.05	7440-53-1
Ba	0.45	7440-39-3
Mg	0.5	7439-95-4
Al	5	7429-90-5

RN 127386-13-4 HCA
CN Aluminum barium europium magnesium borate oxide (Al5Ba0.45Eu0.05Mg0.5(BO3)0.4O7.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7.9	17778-80-2
BO3	0.4	14213-97-9
Eu	0.05	7440-53-1
Ba	0.45	7440-39-3
Mg	0.5	7439-95-4
Al	5	7429-90-5

RN 127433-85-6 HCA
CN Aluminum barium europium magnesium borate oxide (Al7Ba0.15Eu0.05Mg0.8(BO3)0.8O10.3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	10.3	17778-80-2
BO3	0.8	14213-97-9
Eu	0.05	7440-53-1
Ba	0.15	7440-39-3
Mg	0.8	7439-95-4
Al	7	7429-90-5

RN 127433-86-7 HCA
CN Aluminum barium europium magnesium borate oxide (Al3Ba0.1Eu0.1Mg0.8(BO3)1.6O3.1) (9CI) (CA INDEX NAME)

Component	Ratio	Component

		Registry Number
O	3.1	17778-80-2
BO3	1.6	14213-97-9
Eu	0.1	7440-53-1
Ba	0.1	7440-39-3
Mg	0.8	7439-95-4
Al	3	7429-90-5

RN 127433-87-8 HCA
CN Aluminum barium europium magnesium borate oxide (Al7Ba0.3Eu0.05Mg0.65(BO3)0.4O10.9) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	10.9	17778-80-2
BO3	0.4	14213-97-9
Eu	0.05	7440-53-1
Ba	0.3	7440-39-3
Mg	0.65	7439-95-4
Al	7	7429-90-5

RN 127433-88-9 HCA
CN Aluminum barium europium magnesium borate oxide (Al8Ba0.3Eu0.05Mg0.65(BO3)0.4O12.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12.4	17778-80-2
BO3	0.4	14213-97-9
Eu	0.05	7440-53-1
Ba	0.3	7440-39-3
Mg	0.65	7439-95-4
Al	8	7429-90-5

RN 127433-89-0 HCA
CN Aluminum barium europium magnesium borate oxide (Al8Ba0.3Eu0.05Mg0.65(BO3)0.2O12.7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12.7	17778-80-2
BO3	0.2	14213-97-9
Eu	0.05	7440-53-1
Ba	0.3	7440-39-3
Mg	0.65	7439-95-4
Al	8	7429-90-5

RN 127433-90-3 HCA

CN Aluminum barium europium magnesium borate oxide
(Al9Ba0.3Eu0.05Mg0.65(BO3)0.6O13.6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	13.6	17778-80-2
BO3	0.6	14213-97-9
Eu	0.05	7440-53-1
Ba	0.3	7440-39-3
Mg	0.65	7439-95-4
Al	9	7429-90-5

RN 127433-91-4 HCA
CN Aluminum barium europium magnesium borate oxide
(Al6Ba0.2Eu0.1Mg0.7(BO3)0.4O9.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	9.4	17778-80-2
BO3	0.4	14213-97-9
Eu	0.1	7440-53-1
Ba	0.2	7440-39-3
Mg	0.7	7439-95-4
Al	6	7429-90-5

RN 127433-92-5 HCA
CN Aluminum barium europium magnesium borate oxide
(Al4Ba0.5Eu0.1Mg0.4(BO3)0.2O6.7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6.7	17778-80-2
BO3	0.2	14213-97-9
Eu	0.1	7440-53-1
Ba	0.5	7440-39-3
Mg	0.4	7439-95-4
Al	4	7429-90-5

RN 127466-20-0 HCA
CN Aluminum barium europium magnesium borate oxide
(Al3Ba0.1Eu0.1Mg0.8(BO3)O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
BO3	1	14213-97-9
Eu	0.1	7440-53-1
Ba	0.1	7440-39-3

Mg	0.8	7439-95-4
Al	3	7429-90-5

RN 127466-21-1 HCA
CN Aluminum barium europium magnesium borate oxide (Al7Ba0.15Eu0.05Mg0.8(BO3)0.2O11.2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	11.2	17778-80-2
BO3	0.2	14213-97-9
Eu	0.05	7440-53-1
Ba	0.15	7440-39-3
Mg	0.8	7439-95-4
Al	7	7429-90-5

IC ICM C09K011-80
ICS H01J061-42
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST phosphor boroaluminate europium activated; blue **electroluminescent** lamp boroaluminate phosphor
IT **Electroluminescent** devices
(europium-activated boroaluminate for, blue-emitting)
IT Phosphors
(blue-emitting, europium-activated boroaluminate, for **electroluminescent** lamps)
IT **127386-06-5 127386-07-6 127386-08-7**
127386-09-8 127386-10-1 127386-11-2
127386-12-3 127386-13-4 127433-85-6
127433-86-7 127433-87-8 127433-88-9
127433-89-0 127433-90-3 127433-91-4
127433-92-5 127466-20-0 127466-21-1
(phosphor, blue-emitting, for **electroluminescent** lamps)

L25 ANSWER 10 OF 11 HCA COPYRIGHT 2002 ACS
108:176860 Green-emitting phosphor for fluorescent lamp.. Kimura, Yoshio; Tomura, Tomoharu (Toshiba Corp., Japan). Jpn. Kokai Tokkyo Koho JP 62277488 A2 19871202 Showa, 6 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-120209 19860527.
AB The phosphor is v(R1-a-b CeaTbb)2O3wDOxAl2O3ySiO2zB2O3 (R = Y, La, and/or Gd; D = Mg, Ca, Sr, Ba, and/or Zn; 0 <a + b .ltoreq.1; w .noteq. 0; 0 .ltoreq.x ; 0 .ltoreq.y; 0 .ltoreq.z; x + y >0; y + z>0; x + z>0). The phosphor prevents blackening of the end of a lamp tube. The green phosphor 0.5(Ce0.7Tb0.3)2O31.3MgO5.4Al2O30.1SiO2 showed and kept high light transmittance in the fluorescent lamp.
IT **113980-35-1**
(green-emitting phosphor, for blackening-resistant fluorescent lamp)
RN 113980-35-1 HCA
CN Aluminum cerium magnesium terbium borate oxide

(Al10Ce0.6MgTb0.4(BO3)O16) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	16	17778-80-2
BO3	1	14213-97-9
Ce	0.6	7440-45-1
Tb	0.4	7440-27-9
Mg	1	7439-95-4
Al	10	7429-90-5

IC ICM C09K011-80
ICS C09K011-79; C09K011-80
ICA H01J061-44
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT **Electroluminescent** devices
(lamps, green-emitting phosphors for, for blackening resistance)
IT 113980-33-9 113980-34-0 **113980-35-1** 113980-36-2
113980-37-3 113980-38-4 113980-39-5 113980-40-8 113980-41-9
113980-42-0 113980-43-1 113980-44-2 113980-45-3 113980-46-4
113980-47-5 113980-48-6 114013-99-9 114014-00-5
(green-emitting phosphor, for blackening-resistant fluorescent lamp)

L25 ANSWER 11 OF 11 HCA COPYRIGHT 2002 ACS
106:204430 Study of oxygen-containing phosphors during vacuum UV excitation. Manashirov, O. Ya.; Savikhina, T. I.; Zhuravleva, T. A. (USSR). Sb. Nauchn. Tr. - Vses. Nauchno-Issled. Inst. Lyuminoforov Osobo Chist. Veshchestv, 29, 84-91 (Russian) 1985. CODEN: SNVNAR. ISSN: 0371-1722.
AB Results are presented of studies of a series of **luminophors** based on aluminates of Sr-Mg and Sr-Zn, activated by Eu2+ during vacuum UV excitation. The increase of **luminescence** intensity of the phosphors during excitation by photons with 8.4 eV energy was explained by partial isovalent substitution of Al3+ by B3+.
IT **106312-12-3 106312-13-4 106312-14-5**
107250-55-5 107250-56-6 107250-57-7
107250-58-8 107250-59-9 107250-60-2
108158-87-8
(**luminescence** of, vacuum UV-excited)
RN 106312-12-3 HCA
CN Aluminum europium magnesium strontium borate oxide (Al57Eu0.75Mg6Sr7.25(BO3)3O95) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	95	17778-80-2
BO3	3	14213-97-9

Eu	0.75	7440-53-1
Sr	7.25	7440-24-6
Mg	6	7439-95-4
Al	57	7429-90-5

RN 106312-13-4 HCA
CN Aluminum europium strontium zinc borate oxide (Al11.4Eu0.5Sr1.5Zn(BO3)0.6O19.2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	19.2	17778-80-2
BO3	0.6	14213-97-9
Zn	1	7440-66-6
Eu	0.5	7440-53-1
Sr	1.5	7440-24-6
Al	11.4	7429-90-5

RN 106312-14-5 HCA
CN Aluminum europium strontium zinc borate oxide (Al59.5EuSr7Zn5(BO3)0.5O101.5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	101.5	17778-80-2
BO3	0.5	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	59.5	7429-90-5

RN 107250-55-5 HCA
CN Aluminum europium strontium zinc borate oxide (Al55EuSr7Zn5(BO3)5O88) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	88	17778-80-2
BO3	5	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	55	7429-90-5

RN 107250-56-6 HCA
CN Aluminum europium strontium zinc borate oxide (Al56EuSr7Zn5(BO3)4O91) (9CI) (CA INDEX NAME)

Component	Ratio	Component

		Registry Number
O	91	17778-80-2
BO3	4	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	56	7429-90-5

RN 107250-57-7 HCA
CN Aluminum europium strontium zinc borate oxide (Al57EuSr7Zn5(BO3)3O94) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	94	17778-80-2
BO3	3	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	57	7429-90-5

RN 107250-58-8 HCA
CN Aluminum europium magnesium strontium borate oxide (Al57EuMg6Sr7(BO3)3O95) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	95	17778-80-2
BO3	3	14213-97-9
Eu	1	7440-53-1
Sr	7	7440-24-6
Mg	6	7439-95-4
Al	57	7429-90-5

RN 107250-59-9 HCA
CN Aluminum europium strontium zinc borate oxide (Al58EuSr7Zn5(BO3)2O97) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	97	17778-80-2
BO3	2	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	58	7429-90-5

RN 107250-60-2 HCA

CN Aluminum europium strontium zinc borate oxide (Al59EuSr7Zn5(BO3)O100) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	100	17778-80-2
BO3	1	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	59	7429-90-5

RN 108158-87-8 HCA
CN Aluminum europium strontium zinc borate oxide (Al50EuSr7Zn5(BO3)10O73) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	73	17778-80-2
BO3	10	14213-97-9
Zn	5	7440-66-6
Eu	1	7440-53-1
Sr	7	7440-24-6
Al	50	7429-90-5

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT **106312-12-3 106312-13-4 106312-14-5**
106312-15-6 106312-16-7 **107250-55-5 107250-56-6**
107250-57-7 107250-58-8 107250-59-9
107250-60-2 107250-61-3 107250-62-4 **108158-87-8**
(**luminescence** of, vacuum UV-excited)

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L26 ANSWER 1 OF 7 HCA COPYRIGHT 2002 ACS
135:68330 Phosphors for vacuum-UV-excited light-emitting devices. Toda, Kenji; Ono, Keiji; Miyazaki, Susumu (Sumitomo Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 1111025 A2 20010627, 6 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-128210 20001222. PRIORITY: JP 1999-366998 19991224; JP 1999-366996 19991224; JP 1999-366997 19991224; JP 1999-366994 19991224; JP 1999-366995 19991224.
AB Phosphors for use in vacuum-UV-excited light-emitting device are described which are obtainable by adding Eu or Tb as an activating agent to a substrate compd. with the general formula M1M2M3O4, where M1 is .gtoreq.1 of Na and Li, M2 is .gtoreq.1 of Gd and Y, and M3 is .gtoreq.1 of Ge and Si. Phosphors for use in vacuum-UV-excited

light-emitting device are also described which are obtainable by adding Eu as an activating agent to a substrate compd. contg. SrO, Al2O3 and B2O3. Phosphors for use in vacuum-UV-excited light-emitting device are also described which are obtainable by adding Eu or Tb as an activating agent to a substrate compd. with the general formula M2O2CN2, where M represents .gtoreq.1 of La, Y and Gd. Vacuum-UV-excited light-emitting devices contg. the phosphors are also discussed.

IT **345969-66-6**, Aluminum europium strontium borate oxide (Al2Eu0-0.5Sr0.5-1(BO3)2O)
(phosphors for vacuum-UV excited light emitting devices)

RN 345969-66-6 HCA

CN Aluminum europium strontium borate oxide (Al2Eu0-0.5Sr0.5-1(BO3)2O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
BO3	2	14213-97-9
Eu	0 - 0.5	7440-53-1
Sr	0.5 - 1	7440-24-6
Al	2	7429-90-5

IC ICM C09K011-78

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78

IT 159428-98-5D, Lanthanum cyanamide oxide (La2(CN2)O2), solid soln. with Eu/Tb cyanamide oxide 159429-03-5D, solid soln. with La cyanamide oxide 159429-04-6D, Gadolinium cyanamide oxide (Gd2(CN2)O2), solid soln. with La/Eu cyanamide oxide 212369-35-2 **345969-66-6**, Aluminum europium strontium borate oxide (Al2Eu0-0.5Sr0.5-1(BO3)2O) 345969-70-2 345969-71-3
(phosphors for vacuum-UV excited light emitting devices)

L26 ANSWER 2 OF 7 HCA COPYRIGHT 2002 ACS

132:266607 Writing ink compositions containing light-storing pigment. Uchida, Tatsumi (Tombow Pencil Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000109740 A2 20000418, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-287441 19981009.

AB The title compns., with good light resistance and durability, comprise light-storing pigment SrEuAl2-xBxO4 (x = 0.1-1.0) with monoclinic type crystals, binder resins (e.g., maleic anhydride-Me vinyl ether copolymer, polyketones, polyvinylpyrrolidone, polyvinyl butyrals), and org. solvents (e.g., propylene glycol, glycerol, benzyl alc., Ph glycol).

IT **141589-22-2**, Aluminum boron europium strontium oxide
(light-storing pigments; writing ink compns. contg. light-storing pigment)

RN 141589-22-2 HCA

CN Aluminum boron europium strontium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Eu	x	7440-53-1
B	x	7440-42-8
Sr	x	7440-24-6
Al	x	7429-90-5

IC ICM C09D011-16
ICS C09K011-64; C09K011-80
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38
IT **141589-22-2**, Aluminum boron europium strontium oxide
(light-storing pigments; writing ink compns. contg. light-storing pigment)

L26 ANSWER 3 OF 7 HCA COPYRIGHT 2002 ACS
132:252621 Writing ink compositions containing light-storing pigments.
Uchida, Tatsumi (Tombow Pencil Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000104001 A2 20000411, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-276851 19980930.
AB The title inks, with good light resistance and light-storing effects, comprise resins (e.g., maleic anhydride-Me vinyl ether copolymer, polyketones, polyvinyl butyral), org. solvents (e.g., propylene glycol, glycerol, benzyl alc., Ph glycol, polyvinyl pyrrolidone), monoclinic cryst. light-storing pigments MNyAl2-xBxO4 (M = alk. earth metal, N = rare earth element, x = 0.1-1, y = 0 or 1) (e.g., SrEuAl2-xBxO4), and other pigments (e.g., Sinloihi FZ-2000, JIS Azo Yellow GR, phthalocyanine blue).
IT **141589-22-2**, Aluminum boron europium strontium oxide
(monoclinic cryst. light-storing pigments; writing ink compns. contg. light-storing pigments)
RN 141589-22-2 HCA
CN Aluminum boron europium strontium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Eu	x	7440-53-1
B	x	7440-42-8
Sr	x	7440-24-6
Al	x	7429-90-5

IC ICM C09D011-16
ICS C09D011-00
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38
IT **141589-22-2**, Aluminum boron europium strontium oxide
(monoclinic cryst. light-storing pigments; writing ink compns.

contg. light-storing pigments)

L26 ANSWER 4 OF 7 HCA COPYRIGHT 2002 ACS
116:265190 Phosphorescent material with long afterglow. Song, Qingmei; Huang, Jinfei; Wu, Maojun (Fudan University, Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1053807 A 19910814, 4 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1991-107337 19910309.
AB A phosphorescent material showing an afterglow of many h has a compn. m(Sr1-xEux)0.nAl2O3.yB2O5 (1 .ltoreq. m .ltoreq. 5; 1 .ltoreq. n .ltoreq. 8; 0.001 .ltoreq. x .ltoreq. 0.1; 0.005 .ltoreq. y .ltoreq. 0.35) and is prepd. by mixing oxides or salts of Al, Sr, Eu, and B, sintering at 1200-1600.degree. for 1-6 h, cooling, pulverizing, and sintering in a N-H reducing atm. at 1000-1400.degree. for 1-4 h.
IT **141589-22-2P**, Aluminum europium strontium borate oxide (phosphorescent substance, with long afterglow, prepn. of)
RN 141589-22-2 HCA
CN Aluminum boron europium strontium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Eu	x	7440-53-1
B	x	7440-42-8
Sr	x	7440-24-6
Al	x	7429-90-5

IC ICM C09K011-64
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT **141589-22-2P**, Aluminum europium strontium borate oxide (phosphorescent substance, with long afterglow, prepn. of)

L26 ANSWER 5 OF 7 HCA COPYRIGHT 2002 ACS
110:163749 Growth and spectroscopic characterization of neodymium aluminum barium borate using floating zone apparatus. Kumar, J.; Thirumavalavan, M.; Gnanam, F. D.; Ramasamy, P. (Cryst. Growth Cent., Anna Univ., Madras, 600 025, India). Cryst. Res. Technol., 23(10-11), 1337-41 (English) 1988. CODEN: CRTEDF. ISSN: 0232-1300.
AB Transparent NdAlBa borate rods, 60-mm long and 5-mm in diam., were grown using a floating zone app. The prepn. of sintered feed rods and growth conditions are presented. The vibrational spectra (IR and Raman) of the rods were compared with those of NdAl borate crystals grown from flux. The spectra confirmed the presence of the BO3 network which has been identified to have more advantages compared with the silicates. The absorption and the fluorescence spectra of the sample demonstrates its efficiency for use as a laser material.
IT **119854-85-2**
(crystal growth by floating zone method and spectroscopic

characterization of)
RN 119854-85-2 HCA
CN Aluminum barium neodymium borate oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
BO3	x	14213-97-9
Ba	x	7440-39-3
Nd	x	7440-00-8
Al	x	7429-90-5

CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 73
IT **119854-85-2**
(crystal growth by floating zone method and spectroscopic characterization of)

L26 ANSWER 6 OF 7 HCA COPYRIGHT 2002 ACS
110:48919 Crystal structure of neodymium oxide.barium oxide.aluminum oxide.6 boron oxide. Li, Deyu; Tu, Hengyong; Xu, Yueying; Kong, Huashuang; He, Chongfan (Shanghai Inst. Ceram., Acad. Sin., Shanghai, Peop. Rep. China). Wuji Huaxue, 4(1), 23-9 (Chinese) 1988. CODEN: WUHUE7.
AB BaNd2Al2B12O25 is hexagonal,space group P6.hivin.2m, with a 4.566(2) and c 24.92(1) .ANG.; dm = 3.778 and dc = 3.72 for Z = 1. The crystal structure was solved by direct methods with SHELX-76 program system and refined by full-matrix least-squares to R = 8.80%. The at. coordinates are given. Two-thirds of B atoms in unit cell are in tetrahedral coordination which makes the formula of the radical [B2O5]4-; the other one-third of B atoms makes neutral group of [B2O3]0 which links with other cations by van der Waals bond. The obvious cleavage of Nd2O3.BaO.Al2O3.6B2O3 crystal perpendicular to c-axis can be explained by this structure characteristics.
IT **102819-23-8**
(crystal structure of)
RN 102819-23-8 HCA
CN Aluminum barium neodymium borate oxide (Al2BaNd2(BO2)12O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
BO2	12	14100-65-3
Ba	1	7440-39-3
Nd	2	7440-00-8
Al	2	7429-90-5

CC 75-8 (Crystallography and Liquid Crystals)
IT **102819-23-8**

(crystal structure of)

L26 ANSWER 7 OF 7 HCA COPYRIGHT 2002 ACS
105:15679 A new crystal barium neodymium aluminum boron oxide (BaO.Nd2O3.Al2O3.6B2O3) and its crystallographic study. Kong, Huashuang; He, Chongfan; Wang, Peiling; Li, Deyu (Shanghai Inst. Ceram., Acad. Sin., Shanghai, Peop. Rep. China). Yingyong Kexue Xuebao, 4(1), 79-83 (Chinese) 1986. CODEN: YKXUD4.
AB Crystals with compn. of BaO.Nd2O3.Al2O3.6B2O3 were isolated during melt growth of NdAl3(BO3)4. The light purple crystals are hexagonal with a 4.566(2), c 24.93(1).ANG. with d(obsd.) = 3.77, d.(calcd.) = 3.72 for Z = 1. Fluorescence spectrum was also detd.
IT **102819-23-8**
(crystal structure of)
RN 102819-23-8 HCA
CN Aluminum barium neodymium borate oxide (Al2BaNd2(BO2)12O) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
BO2	12	14100-65-3
Ba	1	7440-39-3
Nd	2	7440-00-8
Al	2	7429-90-5

CC 75-8 (Crystallography and Liquid Crystals)
Section cross-reference(s): 78
IT **102819-23-8**
(crystal structure of)